

PERFORATED PLASMA CONFINEMENT RING IN PLASMA
REACTORS

Abstract of the Disclosure

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The invention relates to a plasma processing reactor apparatus for semiconductor processing a substrate. The apparatus includes a chamber. The apparatus further includes a top electrode configured to be coupled to a first RF power source having a first RF frequency and a bottom electrode configured to be coupled to
10 second RF power source having a second RF frequency that is lower than the first RF frequency. The apparatus additionally includes an insulating shroud that lines an interior of the chamber, the insulating shroud being configured to be electrically floating during the processing. The apparatus further includes a perforated plasma confinement ring disposed outside of an outer periphery of the bottom electrode, a top
15 surface of the perforated plasma confinement ring being disposed below a top surface of the substrate and electrically grounded during the processing.